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Observations on the earliest Introduction of Clocks: By the Honourable Daines Barrington. *In a Letter to the Honourable Mr. Justice* Blackstone.

Read at the Society of ANTIQUARIES, Dec. 17, 1778.

DEAR SIR,

AS I know you are somewhat interested with regard to the period when those useful measurers of time called clocks were first made, I send you the result of my inquiries on that head, after having consulted most of those treatises which might be supposed to furnish material information.

EARLIER instances might be produced from these authorities of *Horologia* in different parts of Europe; but this word signifying in those centuries *dials* as well as *clocks*, nothing decisive can be inferred from such term, unless from other circumstances, or expressions, it can be shewn to relate to a clock rather than a dial.

DANTE seems to be the first author who hath introduced the mention of an *orologio, which struck the hour* (and consequently cannot be a dial), in the following lines:

" Indi come horologio che *ne chiami*,
" Nel hora che la ſpoſa d'Idio ſurge,
" Amattinar lo ſpoſo, perche l'ami."

Dante. Paradiſo, C. x.

Now Dante was born in 1265, and died in 1321, aged 57; therefore ſtriking clocks could not have been very uncommon in Italy at the latter end of the 13th century, or the very beginning of the 14th.

BUT the uſe of clocks was not confined to Italy at this period; for we had one of theſe artiſts in England preciſely about the ſame time, who furniſhed the famous clock-houſe near Weſtminſter-hall, with a clock to be heard by the courts of law, out of a fine impoſed on the Chief Juſtice of the King's Bench in the 16th year of Edward I, or A. D. 1288 [*a*].

YOU have in your Commentaries [*b*] obſerved, that this puniſhment of Radulphus de Hengham is firſt taken notice of in the Year Book [*c*] during the reign of Richard III, where indeed no mention is made of a clock's being thus paid for; but if the circumſtances ſtated in the report of this caſe are conſidered, it was highly unneceſſary, and perhaps improper, to have alluded to this application of the Chief Juſtice's fine.

IT appears by the Year Book, that Richard III. had cloſeted the Judges in the *Inner* Star Chamber, to take their opinions upon three points of law; the ſecond of which was, " Whether a Juſtice of the Peace, who had inrolled an indict-
" ment which had been negatived by the Grand Jury, amongſt
" the *true bills*, might be puniſhed for this abuſe of his office."

[*a*] See Selden in his Pref. to Hengham.
[*b*] Vol. III. p. 408.
[*c*] Mich. 2. Ric. 3.

ON

ON this queſtion a diverſity of opinion ariſes amongſt the Judges, ſome of which ſuppoſe, that a magiſtrate cannot be proſecuted for what he may have done; whilſt others contend, that he may, and cite the caſe of Hengham, who was fined 800 marks for making an alteration in a record, by which a poor defendant was only to pay 6*s.* 8*d.* inſtead of 13*s.* 4*d.*

THUS far the anſwer of the Judges to the queſtion propoſed was ſtrictly proper; but the application of the fine to the building a clock-houſe [*d*] was not the leaſt material; beſides that it was probably a moſt notorious fact to every ſtudent upon his firſt attending Weſtminſter-hall, as we find Judge Southcote ſo much later, in the early part of Queen Elizabeth's reign, not only mentioning the tradition, but that the clock ſtill continued there, which had been furniſhed out of the Chief Juſtice's fine [*e*]. Sir Edward Coke likewiſe adds, that the 800 marks were actually entered upon the roll [*f*], ſo that it is highly probable he had himſelf ſeen the record.

BUT we have remaining to this day ſome degree of evidence not only of the exiſtence of ſuch a clock, but that it is of the antiquity already aſcribed to it, *viz.* the reign of Edward the Firſt.

ON the ſide of New Palace-yard which is oppoſite to Weſtminſter-hall, and in the ſecond pediment of the new buildings from the Thames, a dial is inſerted with this remarkable motto upon it, "*Diſcite Juſtitiam Moniti*," which ſeems moſt clearly

[*d*] We find that this clock was conſidered during the reign of Henry VI. to be of ſuch conſequence, that the king gave the keeping of it, with the appurtenances, to William Warby, dean of St. Stephen's, together with the pay of 6*d.* per diem, to be received at the Exchequer. See Stowe's account of Weſtminſter, vol. II. p. 55. The clock at St. Mary's, Oxford, was alſo furniſhed in 1523, out of fines impoſed on the ſtudents of the univerſity.

[*e*] 3 Inſt. 72.

[*f*] 4 Inſt. p. 255.

to relate to the fine impoſed on Radulphus de Hengham, being applied to the paying for a clock.

BUT it may be ſaid, that this inſcription is on a dial and not upon a clock; which, though it appears upon the firſt ſtating it to be a moſt material objection, yet I conceive it may receive the following ſatisfactory anſwer.

THE original clock of Edward the Firſt's reign was probably a very indifferent one; but from its great antiquity, and the tradition attending it, was ſtill permitted to remain till the time of Queen Elizabeth according to the authorities already cited.

AFTER this, it being quite decayed, a dial might have been ſubſtituted and placed upon the ſame clock-houſe, borrowing its very ſingular motto; which, whether originally applied in the time of Edward the Firſt, or in later reigns, moſt plainly alludes to Hengham's puniſhment for the altering a record.

IT ſhould alſo be mentioned, that this dial ſeems to have been placed exactly where the clock-houſe ſtood according to Strype [*g*].

MR. Norris, Secretary of the Society of Antiquaries, hath been likewiſe ſo obliging as to refer me to the following inſtance of a very ancient clock in the ſame century:

"ANNO 1292, *Novum* Orologium Magnum in Eccleſiâ (ſc. "Cantuarienſi) pretium 30*l*. [*h*].

I SHALL now produce a proof, that not only clocks but watches were made in the beginning of the 14th century.

SEVEN or eight years ago, ſome labourers were employed at Bruce caſtle in Fifeſhire, where they found a watch, together with ſome coin; both of which they diſpoſed of to a ſhopkeeper

[*g*] Weſtminſter, p. 55, in his additions to Stowe. This clock-houſe continued in a ruined ſtate till the year 1715.—Antiquarian Repertory, p. 280.

[*h*] Dart's Canterbury, Appendix, p. 3. ex Bibl. Cotton. Galba, E. 4. fol. 183.

of

of St. Andrews, who ſent the watch to his brother in London, conſidering it as a curious piece of antiquity [*i*]. The outer caſe is of ſilver, raiſed, in rather a handſome pattern, over a ground of blue enamel; and I think I can diſtinguiſh a cypher of R. B. at each corner of the enchaſed work. On the dial-plate is written, *Robertus B. Rex Scottorum*, and over it is a convex tranſparent horn, inſtead of the glaſſes which we uſe at preſent.

Now Robertus B. Rex Scottorum can be no other king of Scotland than Robert Bruce, who began his reign in 1305, and died in 1328; for the chriſtian name of Baliol who ſucceeded him was Edward; nor can Robertus B. be applied to any later Scottiſh king.

THIS very ſingular watch is not of a larger ſize than thoſe which are now in common uſe; at which I was much ſurpriſed till I had ſeen ſeveral of the 16th century in the collection of Sir Aſhton Lever, and Mr. Ingham Forſter, which were conſiderably ſmaller.

As I mean to deduce the progreſs of the art of clock-making in a regular chronological ſeries, the next mention I find of *Horologia*, is in Rymer's Fœdera, where there is a protection of Edward the Third, A. D. 1368, to three Dutchmen, who were *Orlogiers*. The title of this protection is, "De Horologiorum Artificio ex-"ercendo;" and I hope to have ſufficiently proved that there was no neceſſity of procuring mere dial-makers at this time.

CLOCK-makers, however, were really wanted at this period of the 14th century, as may be inferred from the following lines of Chaucer [*k*], when he ſpeaks of a cock's crowing:

[*i*] It is now in his majeſty's poſſeſſion.
[*k*] Chaucer was born A. D. 1328, and died in 1400.

"Full

" Full ſikerer was his crowing in his loge,
" As is a *clock*, or any abbey orloge."

By which (as I conceive at leaſt) our old poet means to ſay, that the crowing was as certain as a *bell*, or abbey *clock* [*l*]. For though we at preſent aſk ſo often, What is it *o'clock*? (meaning the time meaſurer) yet I ſhould rather ſuppoſe, that in the 14th century, *clock* was often applied to a *bell*, which was rung at certain periods, determined by the hour-glaſs or ſun-dial. Nor have I been able to ſtumble upon any paſſage which alludes to a clock, by that name, earlier than the 13th of Henry VIII. [*m*].

THE *abbey orloge* (or clock) however, muſt have been not uncommon when Chaucer wrote theſe lines, and from their beginning to be in uſe, we might have occaſion for more artificers in this branch; though it ſhould ſeem, that we had Engliſhmen who pretended, at leaſt, to underſtand it, becauſe the protection of Edward the Third, above cited, directs, that they ſhall not *be moleſted* whilſt they are thus employed.

[*l*] To the time of Queen Elizabeth clocks were often called orologes;

" He'll watch the *horologe a double ſet*,
" If drink rock not his cradle."

Othello, act ii. ſc. 3.

By which the *double ſet* of 12 hours on a clock is plainly alluded to, as not many more than 12 can be obſerved on a dial; and in the ſame tragedy, this laſt time-meaſurer is called by its proper name:

" More tedious than the dial eight-ſcore times."

Ibid. act iii. ſc. 4.

The clock of Wells cathedral is alſo to this day called the *horologe*.

[*m*] See Dugd. Orig. Jur. Lydgate, therefore, who wrote before the time of Henry VIII, ſays,

" I will myſelf be your *orlogere*
" To-morrow early."

Prologue to the Storye of Thebees.

I NOW

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I NOW paſs on to a famous aſtronomical clock, made by one of our countrymen in the reign of Richard the Second, the account of which I have extracted from Leland.

RICHARD of Walingford was ſon of a ſmith, who lived at that town, and who, from his learning and ingenuity, became abbot of St. Alban's. Leland proceeds, "cum jam per amplas licebat "fortunas, voluit illuſtri aliquo opere, non modo ingenii, verum "etiam eruditionis, ac artis excellentis, miraculum oſtendere. "Ergo talem *horologii* fabricam magno labore, majore ſumptu, "arte vero maximâ, compegit, qualem non habet tota Europa "*meâ opinione*, ſecundum, ſive quis curſum ſolis ac lunae, ſeu "fixa ſidera notet, ſive iterum maris incrementa & decre- "menta [*n*]."

RICHARD of Walingford alſo wrote a treatiſe on this clock, "Ne tam inſignis machina vileſceret errore monachorum, aut "incognito ſtructurae ordine, fileſceret."

FROM what hath been above ſtated it appears, that this aſtronomical clock continued to go in Leland's time, who was born at the latter end of Henry the Seventh's reign, and who ſpeaks of a tradition, that this famous piece of mechaniſm was called *Albion* by the inventor.

HAVING thus endeavoured to prove that clocks have been made in England from the time of Edward the Firſt to that of Richard the Second, it is not eſſential to my principal purpoſe to deduce them lower through the ſucceſſive reigns; but when I have ſhortly ſtated what I happen to have found with regard to this uſeful invention in other parts of Europe, I ſhall attempt to ſhew why they were not more common in the 13th and 14th centuries.

[*n*] Leland de Script. Brit.

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THE citation from Dante, which I have before relied upon, ſhews, that they were not unknown in Italy during that period; and M. Falconet (in the Memoires de Litterature) informs us, that a James Dondi, in the 14th century, aſſumed, from a clock made by him for the tower of a palace, the name of *horologius*, which was afterwards borne by his deſcendants.

IN France (or what is now ſo called) Froiſſart mentions, that during the year 1382, Philip the Hardy, duke of Burgundy, removed from Courtray to his capital at Dijon, a famous clock which ſtruck the hours, and was remarkable for its mechaniſm [*o*].

THE great clock at Paris was put up in the year 1370, during the reign of Charles the Fifth, having been made by *Charles de Wic*, a German [*p*].

CARPENTIER, in his ſupplement to Du-Cange, cites a deciſion of the Parliament of Paris, A. D. 1413, in which Henry Bye (one of the parties) is ſtiled Gubernator Horologii palatii noſtri Pariſiis [*q*].

ABOUT the ſame time alſo the clock at Montargis was made, with the following inſcription,

Charles le Quint (ſc. de France)
Me fit par Jean de *Jouvence*.

which ſeems to be the name of a Frenchman.

THOUGH I have not happened to meet with any mention of very early clocks in Germany, yet from the great clock at Paris in 1370, being the work of De-Wic, as alſo from the protection granted by Edward the Third to three clock-makers from Delft, it ſhould ſeem, that this part of Europe was not without this

[*o*] Froiſſart, t. ii. ch. 127.
[*p*] Falconet, Mem. de Litt. t. 20.
[*q*] See Carpentier, Art. *Horologiator*.

uſeful

uſeful invention [*r*]; and the ſame may be inferred with regard to Spain, from their old ſaying,

Eſtar como un relox [*s*].

HAVING now produced inſtances of ſeveral clocks, and even a watch, which were made in different parts of the 14th century, as alſo having endeavoured to prove that they were not exceſſively uncommon even in the 13th, it may be thought neceſſary that I ſhould account for their not being more generally uſed during theſe periods, as, in their preſent ſtate at leaſt, they are ſo very convenient. For this, it ſhould ſeem, that many reaſons may be aſſigned.

IN the infancy of this new piece of mechaniſm, they were probably of a very imperfect conſtruction, perhaps never went tolerably, and were ſoon deranged, whilſt there was no one within a reaſonable diſtance to put them in order.

To this day the moſt muſical people have ſeldom a harpſichord in their houſe, if the tuner cannot be procured from the neighbourhood.

[*r*] Mr. Peckett, an ingenious apothecary of Compton-ſtreet, Soho, hath ſhewn me an aſtronomical clock which belonged to the late Mr. Ferguſon, and which ſtill continues to go. The workmanſhip on the outſide is elegant, and it appears to have been made by a German in 1525, by the ſubjoined inſcription in the Bohemian of the time:

IAR. DA. MAHCHT. MICH. IACOB. ZECH.
ZV. PRAG. IST. BAR. DAMAN. ZALT. 1525.

The above engliſhed.

YEAR. WHEN. MADE. ME. IACOB. ZECH.
AT. PRAGUE. IS. TRUE. WHEN. COUNTED. 1525.

The diameter of this clock is 9 inches ½, and the height 5 inches.

[*s*] I am alſo referred by the Rev. Mr. Bowle, F. S. A. to the following paſſage in the abridged Hiſtory of Spain:

" The firſt clock ſeen in Spain was ſet up in the cathedral of Seville 1400." Vol. I. p. 568.

WE find, therefore, that Henry the Sixth of England, and Charles the Fifth of France, appointed clock-makers, with a ſtipend, to keep the Weſtminſter and Paris clocks in order.

IT need ſcarcely be obſerved alſo, that as the artiſts were ſo few, their work muſt have been charged accordingly, and that kings only could be the purchaſers of what was rather an expenſive toy, than of any conſiderable uſe. And it may perhaps be ſaid, that they continued in a great meaſure to be no better than toys till the middle of the 17th century.

ADD to this, that in the 13th and 14th centuries, there was ſo little commerce, intercourſe, or ſociety, that an hour-glaſs, or the ſun, was very ſufficient for the common purpoſes, which are now more accurately ſettled by clocks of modern conſtruction. Dials and hour-glaſſes likewiſe wanted no mending.

HAVING now finiſhed what hath occurred to me with regard to the firſt introduction of clocks, I ſhall conclude by a few particulars, which I have been enabled to pick up, in relation to thoſe more portable meaſurers of time, called *watches*, the earlieſt of which (except that of Robert Bruce King of Scotland) ſeems to be one in Sir Aſhton Lever's moſt valuable muſeum, the date upon which is 1541 [*t*].

DERHAM (in his Artificial Clock-maker, publiſhed in 1714) mentions a watch of Henry the Eighth, which was ſtill in order; and Dr. Demainbray informs me, that he hath heard both Sir Iſaac Newton and Demoivre ſpeak of this watch [*u*].

[*t*] The oldeſt clock we have in England that is ſuppoſed to go tolerably, is of the preceding year, viz. 1540, the initial letters of the maker's name being N. O. It is in the palace at Hampton Court. Derham's Artificial Clock-maker.

[*u*] That diſtinguiſhed antiquary Mr. Walpole has in his poſſeſſion a clock, which appears by the inſcription to have been a preſent from Henry the Eighth to Anne Boleyn. Poynet, biſhop of Wincheſter, likewiſe gave an aſtronomical clock to the ſame king. Godwyn de Praeſul.

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THE emperor Charles the Fifth (Henry's contemporary) was ſo much pleaſed with theſe time-meaſurers, that he uſed to ſit after his dinner with ſeveral of them on the table, his bottle being in the center [*w*]; and when he retired to the monaſtery of St. Juſt, he continued ſtill to amuſe himſelf with keeping them in order, which is ſaid to have produced a reflection from him on the abſurdity of his attempt to regulate the motions of the different powers of Europe.

SOME of the watches uſed at this time ſeem to have been ſtrikers; at leaſt we find in the Memoirs of Literature [*x*], that ſuch watches having been ſtolen both from Charles the Fifth and Lewis the Eleventh, whilſt they were in a croud, the thief was detected by their ſtriking the hour.

IN moſt of the more ancient watches (of which I have ſeen ſeveral in the collection of Sir Aſhton Lever and Mr. Ingham Forſter) catgut ſupplied the place of a chain, whilſt they were commonly of a ſmaller ſize than we uſe at preſent, and often of an oval form [*y*].

FROM theſe and probably many other imperfections they were not in any degree of general requeſt till the latter end of queen Elizabeth's reign; accordingly in Shakeſpear's Twelfth Night [*z*], Malvolio ſays,

" I frown the while, and perchance *wind up my watch*, or " play with ſome rich jewel."

AGAIN in the firſt edition of Harrington's Orlando Furioſo (printed in 1591), the author is repreſented with what ſeems to

[*w*] Mem. de Litt. t. 20. See alſo the lately publiſhed Collection of State Papers, vol. I. p. 53.

[*x*] T. 20.

[*y*] Pancirollus informs us, that about the end of the 15th century, watches were made no larger than an almond, by a man whoſe name was Mermecide. Encyclop.

[*z*] Act ii. ſc. 2.

be a watch, (though the engraving is by no means diſtinct) on which is written,

Il tempo paſſa [*a*].

IN the 3d of James the Firſt, a watch was found upon Guy Fawkes, which he and Percy had bought the day before, "to "try concluſions for the long and ſhort burning of the touch-"wood, with which he had prepared to give fire to the train "of powder [*b*]."

IN 1631 Charles the Firſt incorporated the clock-makers; and the charter prohibits *clocks*, *watches*, and *alarms*, from being imported, which ſufficiently proves that they were now more commonly uſed, as well as that we had artiſts of our own, who were expert in this branch of buſineſs.

ABOUT the middle of the 17th century, Huygens made his great improvement in clock-work, which produced many others from our own countrymen [*c*]; the lateſt of which was the introduction of repeating watches in the time of Charles the Second, who, as I have been informed by the late lord Bathurſt, ſent one of the firſt of theſe new inventions to Lewis XIV.

THE former of theſe kings was very curious with regard to theſe time-meaſurers; and I have been told by an old perſon of the trade, that watch-makers (particularly Eaſt) uſed to attend whilſt he was playing at the Mall, a watch being often the ſtake.

[*a*] Somner's Canterbury, Supplement, N° XIV. p. 36. See alſo in an extract from archbiſhop Parker's will, made April 5, 1575:

"Do, et lego fratri meo Ricardo epiſcopo Elienſi, baculum meum de canna "Indica, qui *Horologium* habet in ſummitate."

As likewiſe in the brief of his goods, &c. N° XIV. p. 39.

"A clock, valued at 54*l.* 4*s.*" See the ſame brief.

[*b*] Stowe's Chron. p. 878. and Introd. to Mr. Reuben Burrow's Almanack for 1778.

[*c*] More particularly Dr. Hooke, Tompion, &c.

BUT

BUT we have a much more curious anecdote of royal attention to watches in Dr. Derham's Artificial Clock-maker.

BARLOW had procured a patent, in concert with the Lord Chief Juſtice Allebone, for *repeaters*; but Quare making one at the ſame time upon ideas he had entertained before the patent was granted, James the Second tried both, and giving the preference to Quare's, it was notified in the Gazette [*d*].

IN the ſucceeding reign, the reputation of the Engliſh work in this branch was ſuch, that in the year 1698, an act paſſed obliging the makers to put their names on watches, leſt diſcreditable ones might be ſold abroad for Engliſh [*e*].

IF any of theſe particulars, or anecdotes, ſhould prove intereſting to you, it will amply recompence the trouble I may have had in collecting them; being

Dear Sir,

Your moſt faithful humble Servant,

DAINES BARRINGTON.

[*d*] Derham's Art. Cl. p. 107.
[*e*] 9 & 10 W. III. ch. 28. ſ. 2.

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